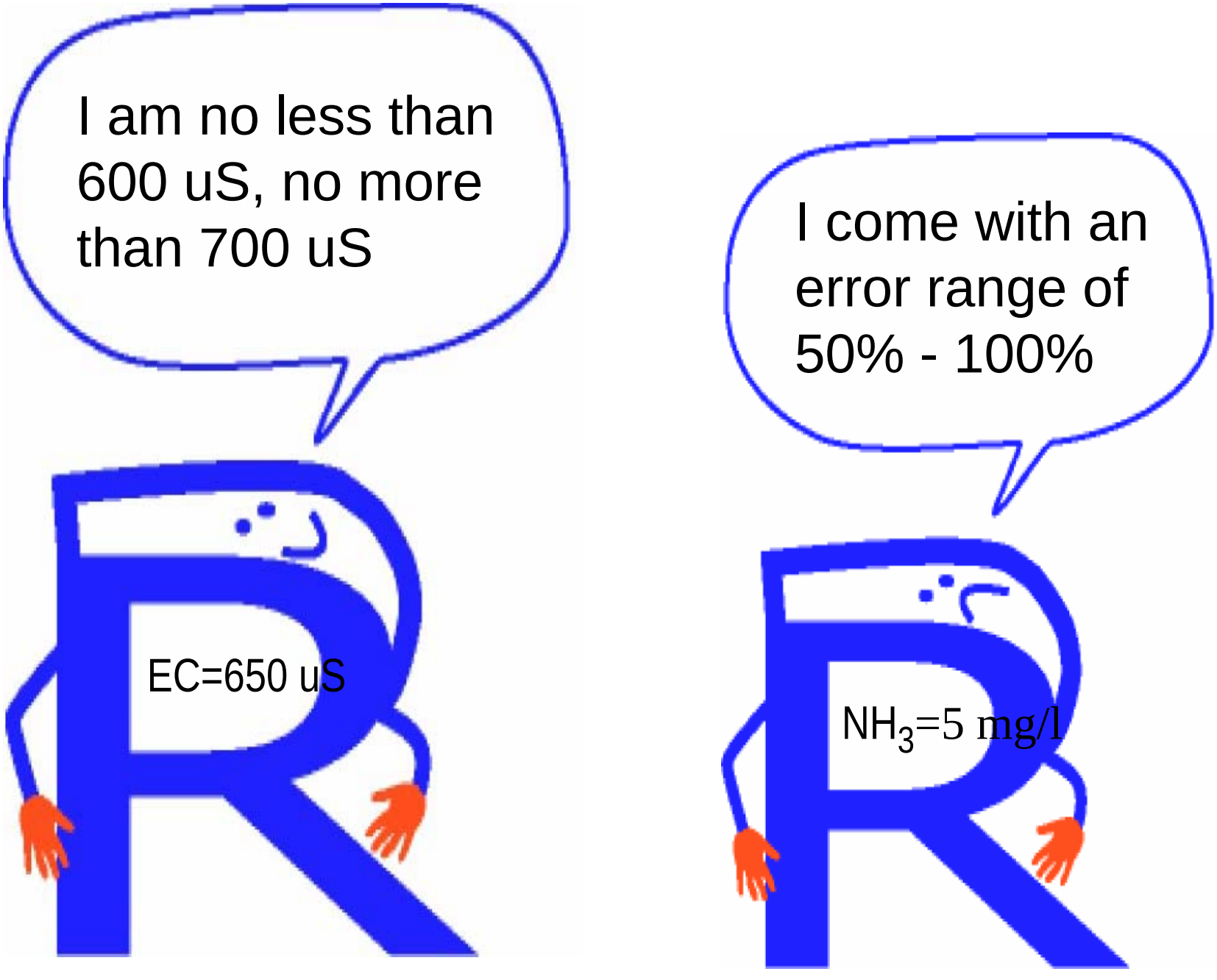
From Wildcat Creek to STORET: Journey of Data.

Revital Katznelson and David Wilcox

NWQMC 2004
Chattanooga, Tennessee


I am no less than 600 uS, no more than 700 uS
EC=650 uS
I come with an error range of 50% - 100%
NH3=5 mg/l

Project Objectives

(1) Generation and reporting of reliable, defensible, and usable field monitoring data of known quality.

(2) Delivery of the data into STORET

Challenges of managing the quality of Field data

- Limited QA guidance for Field work
- Manufacturer's instructions not QA oriented
- Need to develop Field data qualifiers
- Need to add specificity and detail

Calibration: **"Comparison of a measurement standard, instrument, or item with a standard or instrument of higher accuracy to detect and quantify inaccuracies and to report or eliminate those inaccuracies by adjustments" [USEPA].**

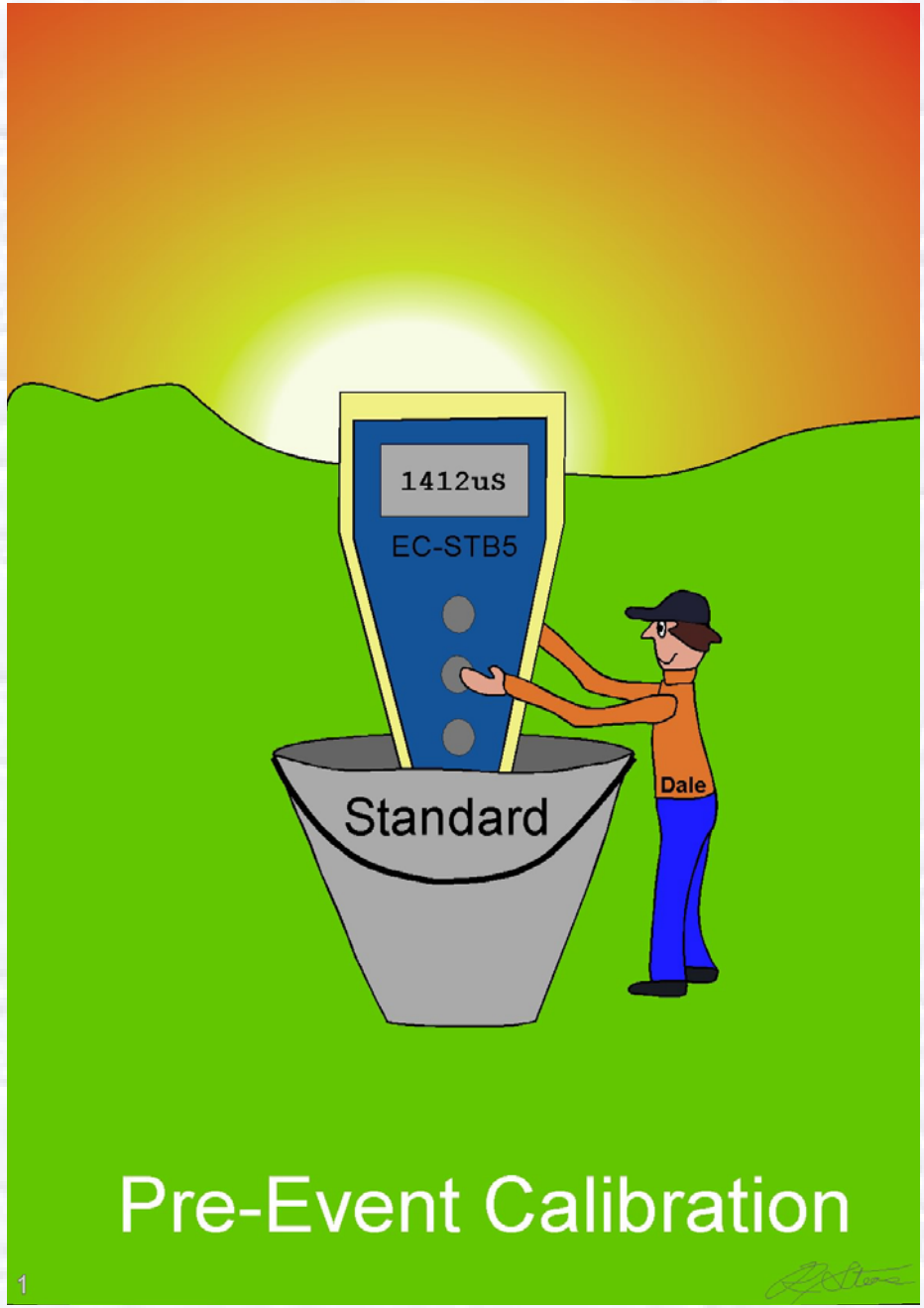
May be SEPARATED into…

Accuracy check: **Comparison of the reading, with a value believed the "true" value, without adjustments of the reading.**

Calibration adjustment: **The action of adjusting the readings of an instrument to have them match a "true" value (after you run the accuracy check…).**

1. Pre-Event Calibration Adjustment

Dale the Field Operator adjusts the reading of the Instrument in the Standard before monitoring, to assure accuracy.



Cast of Characters

R is the monitoring Result: the outcome of a measurement or analysis.

Dale: The Field Operator

Pat: The Technical Leader and internal Quality Assurance Officer

Chris: The Trainer and QA Person

Robin: The Information Technology (IT) Expert

DQM Field Data Sheet for Water Quality Monitoring

Date _____ Page _____ of _____ _____

Waterbody Name: _____

Project Name and/or ID: _____ **Station ID:** _____

Group/Organization name and/or ID: _____ Station Name: _____

Team Name: _____ Station Habitat (*circle one* : Pool, Run, Riffle)

Trip ID _____ Station Visit ID _____

Leader (name & Members: *(list additional names on back)*	Date of last rain

Observations: *Circle one underlined option:* **Observations Time:** _____

Cloud cover	no clouds; partly cloudy; cloudy sky
Precipitation	none ; misty; foggy; drizzle; rain;
Wind	calm; breezy; windy;
Water Murkiness	clear water; cloudy water (>4" visibility), murky (<4" visibility). *[this pertains to the water itself, not to scum]*
Flow conditions	dry creekbed; isolated pools; trickle (< 0.25 gal/sec); < 5 gal/sec; > 5 gal/sec; full waterway no observed flow
Sample color	none; amber; yellow; green; brown; gray; other:
Sample odor	none; fresh algae smell; chlorine; rotten eggs; sewage; other
Other (presence:)	algae or water plants; oily sheen; foam or suds; litter; trash; other

Measurements

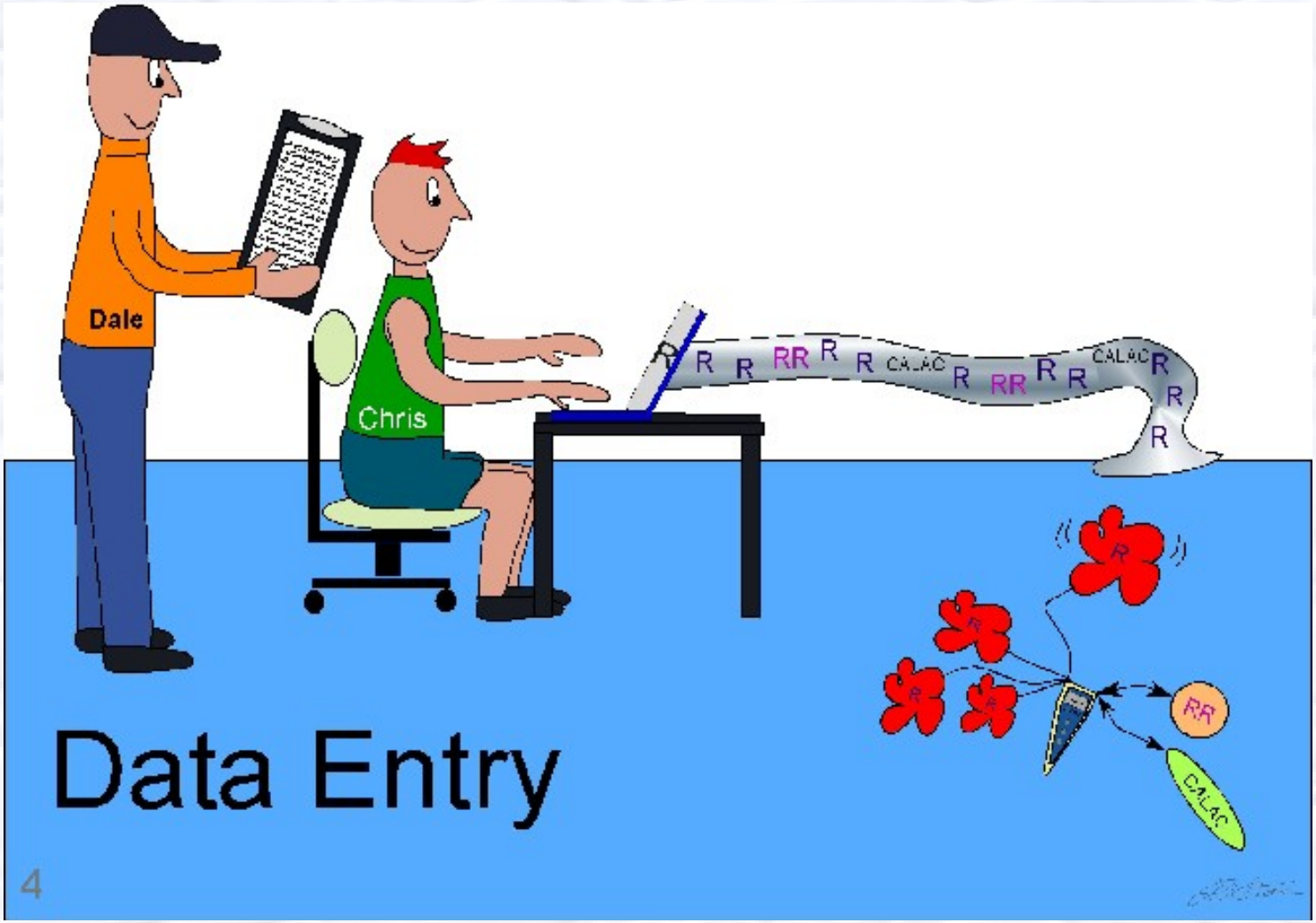
Instrument ID	**Parameter**	**Unit**	**Result**	**Repeated** Measurement Result	**Bracket/ Resolution**	Measurement **Time**	Measurement **Depth***	**Comments**
	Total Depth (at Station) or Staff Gage readout	cm					not applicable	
	Conductivity	µS						
	Dissolved Oxygen	mg/l (ppm)						
	H2O Temperature	°C						
	pH	pH						
	Transparency	cm						

***Measurement Depth**: *(Select)* surface; mid-column; near-bottom; (*or provide measured number and unit*)

Sampling Device: *(for observations, measurements, and Samples)* : none; pole&beaker; bucket& rope; Kemmerer; other:

Sample ID *(for offsite analyses)*	Collection Time	Collection Depth	Sample Containers

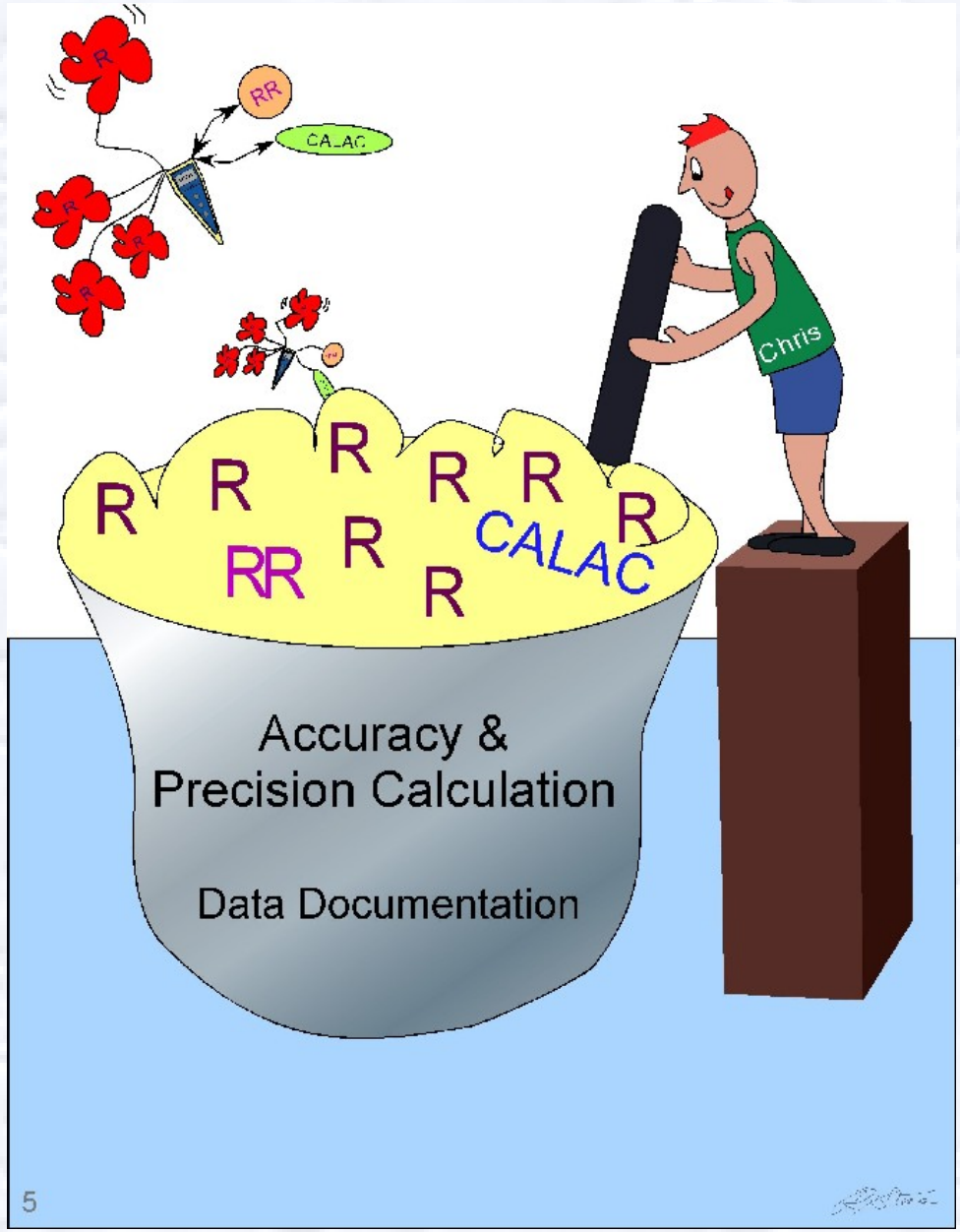
3. Post-Event Accuracy Checks

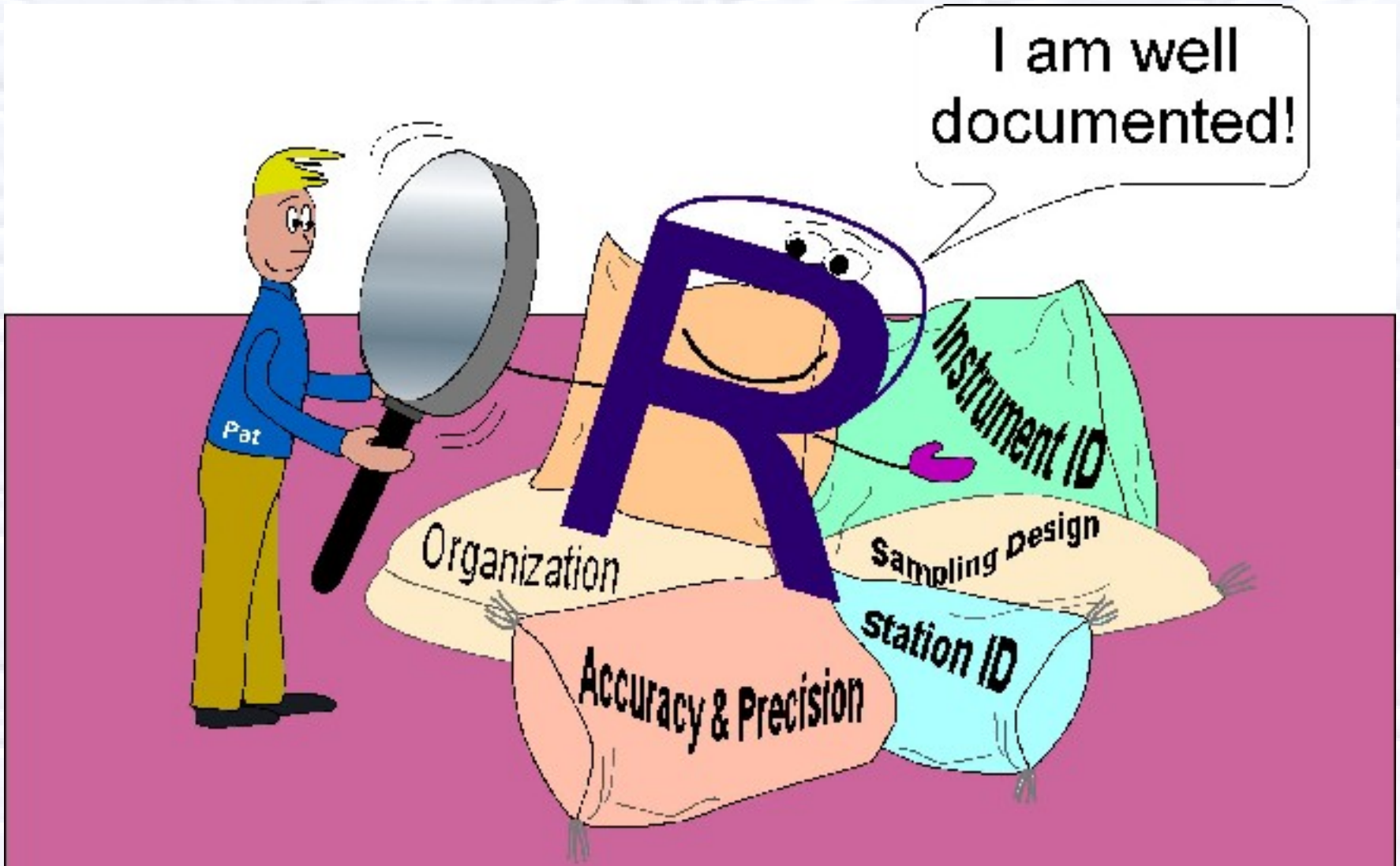


4. Data Entry

Results (R), Calibration adjustments and Accuracy Checks **(CALAC);** Repeated Measurements **(RR)** records are entered.

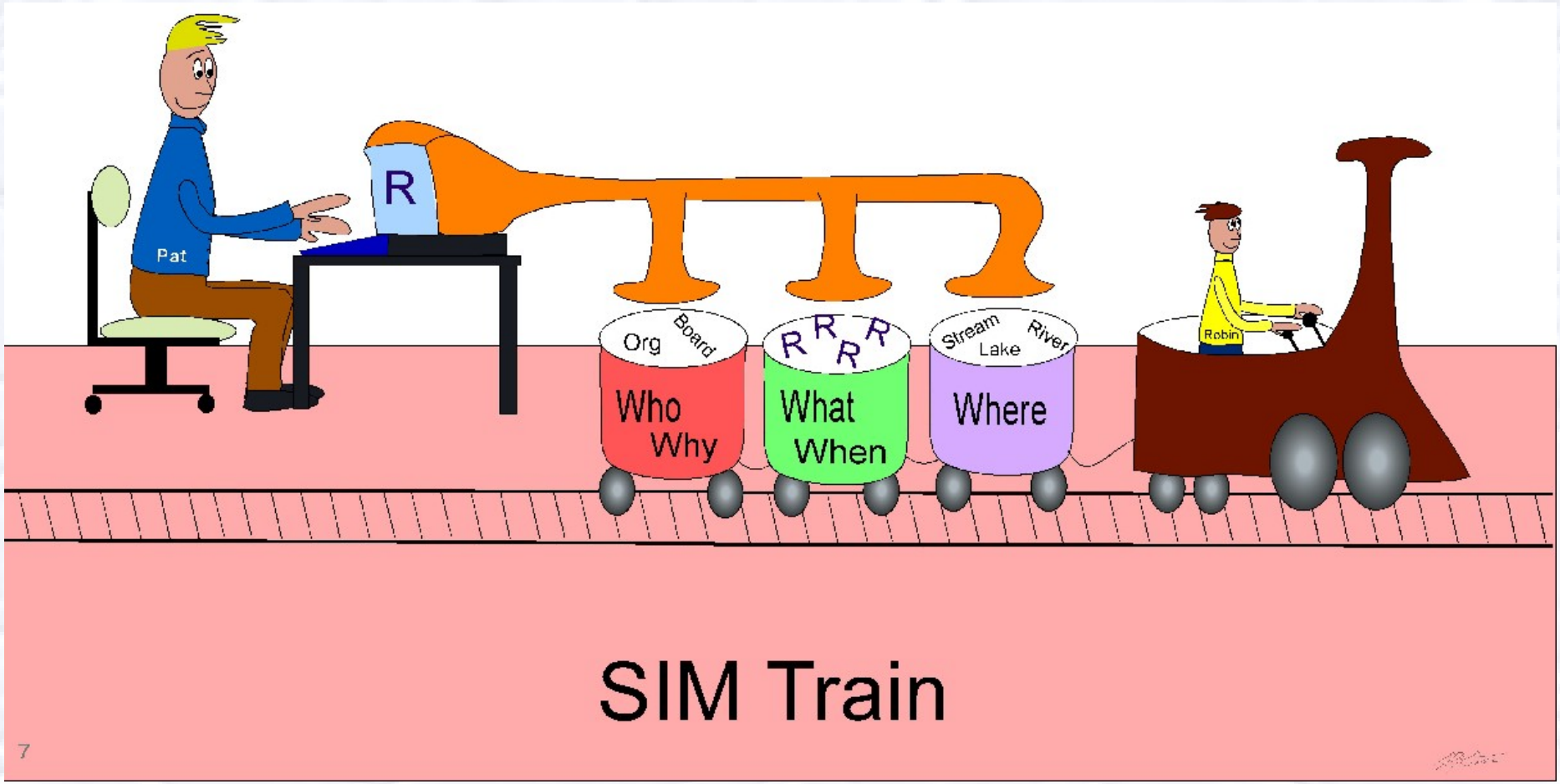
5. Error Calculation and Data Documentation



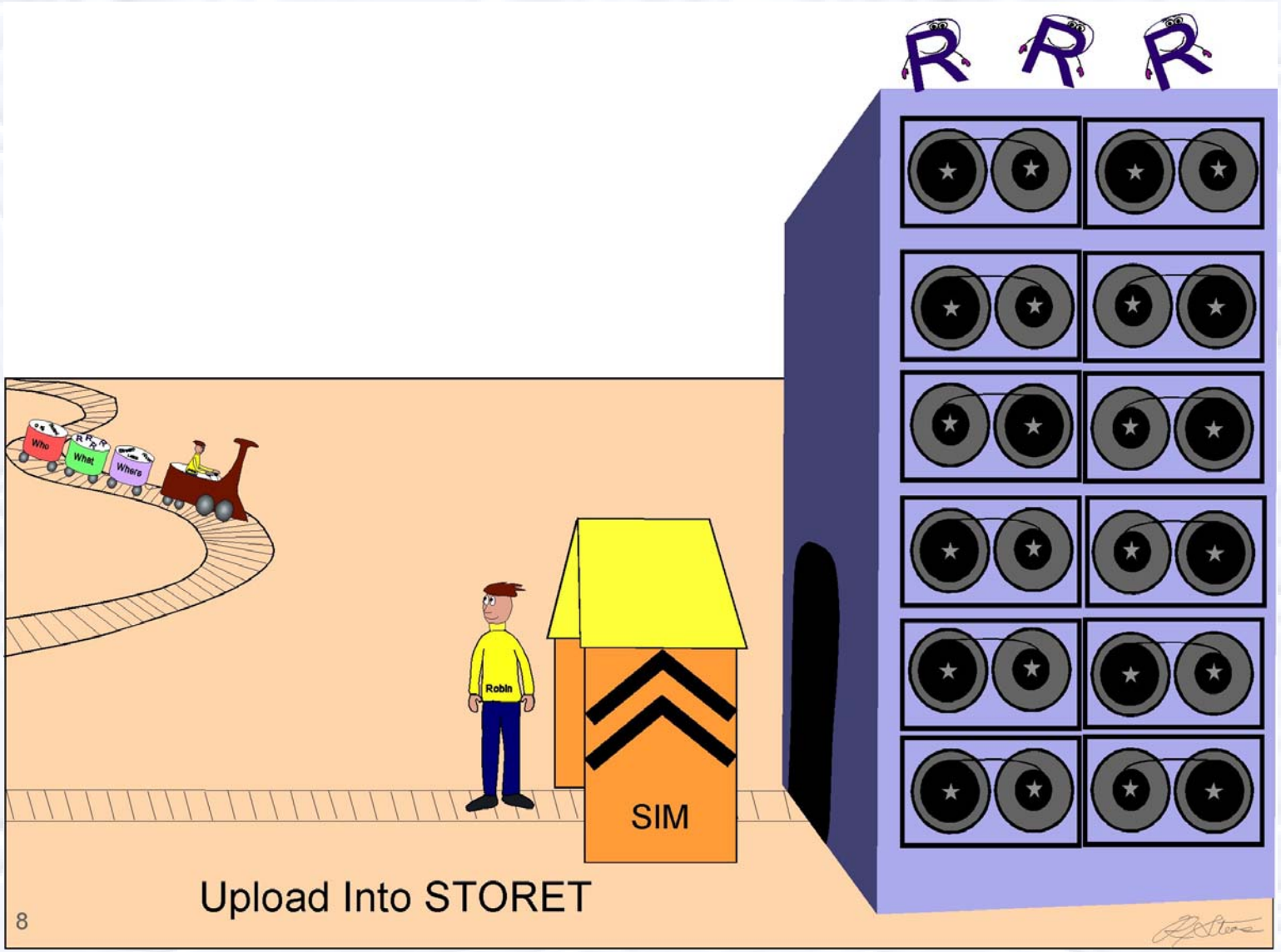


Data Verification & Validation

7. Preparation for SIM



8. Data Upload into STORET



Shortcuts?

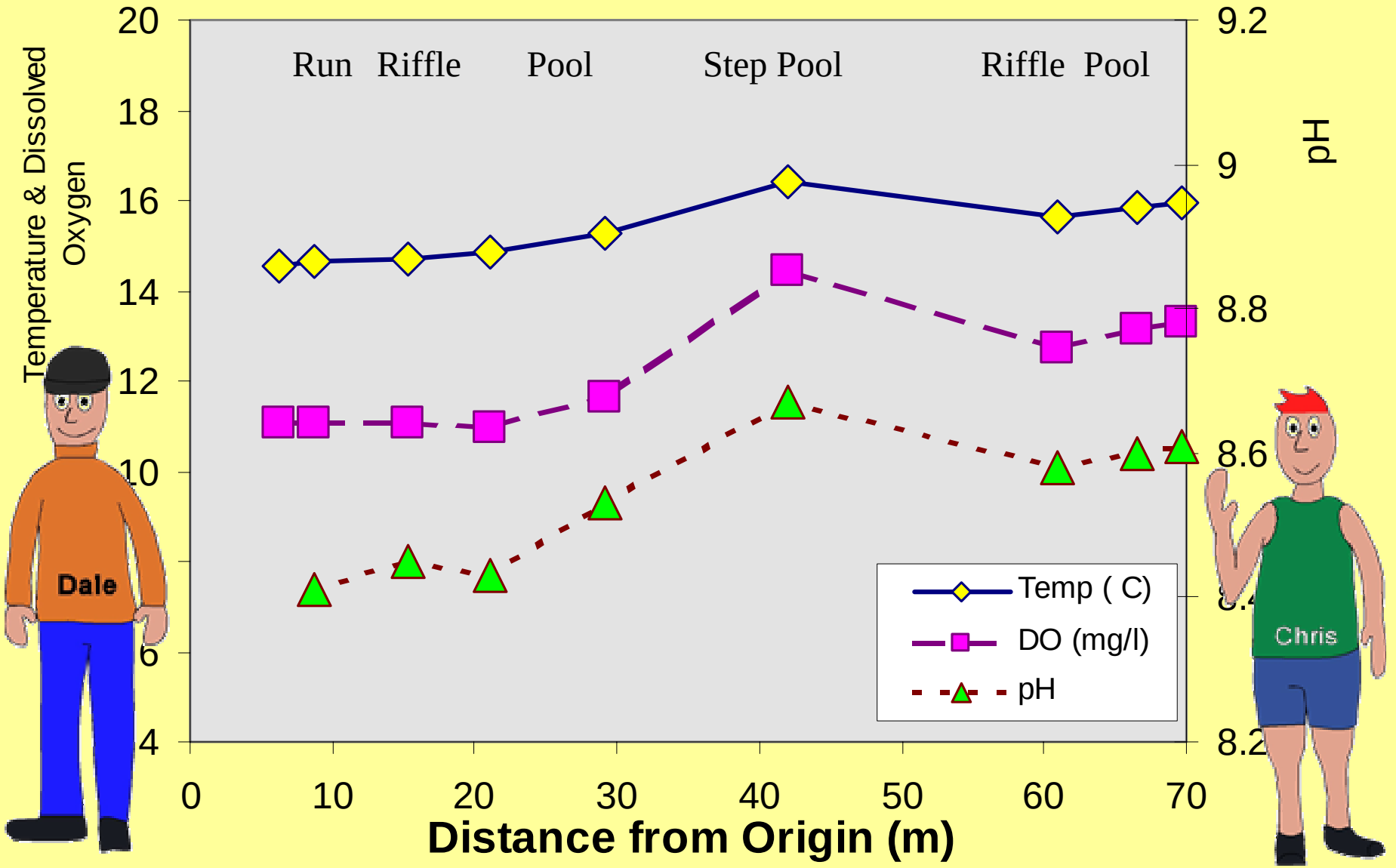
- Yes, for screening-quality data

Business Rules?

- A Must

Wildcat Creek Walk 6/22/03 10:45 - 12:00

The Monitoring Team walked upstream, and stopped at the different habitats to take measurements



Acknowledgments

- Dales
- Chrises
- Pats
- Robins (Ryan Hecker)

- And my colleagues from the Clean Water Team, the Citizen Monitoring Program of the State Water Resources Control Board